

APPLICATIONS

50 Drugs in Less than Two Minutes: Ballistic Comprehensive Drug Research Panel using MercuryMS™ Cartridge System

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Introduction

Using a ballistic gradient and a small 20 x 4.0 mm Kinetex® Biphenyl cartridge in a MercuryMS holder, we are able to screen 50 drugs in less than 2 minutes. This includes relatively good resolution on isobars such as naloxone and 6-MAM, fluoxetine and methadone, codeine and hydromorphone, and more.

LC-MS/MS Conditions

Column: Kinetex 2.6 µm Biphenyl*
Dimensions: 20 x 4.0 mm
Part No.: 00M-4622-D0-CE
Mobile Phase: A: 0.1% Formic acid in Water
 B: 0.1% Formic acid in Methanol
Gradient:

| Time (min) | % B |
|------------|-----|
| 0 | 30 |
| 0.1 | 95 |
| 0.8 | 95 |
| 0.81 | 30 |
| 2 | 30 |

Injection: 10 µL
Flow Rate: 0.8 mL/min
Temperature: Ambient
Detection Mode: ESI(+) and ESI(-) separately
Detection: MS/MS (SCIEX Triple Quad™ 4500)

*requires MercuryMS holder

Figure 2.
XIC of Negative Mode Panel

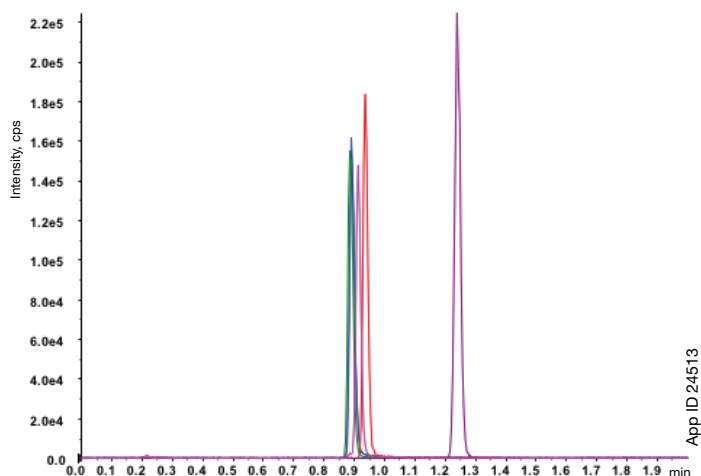


Figure 1.
XIC of Positive Mode Panel

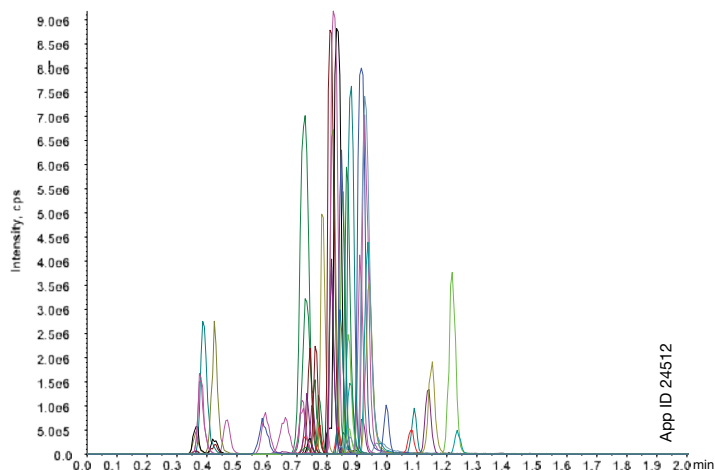


Table 1.
List of Positive Mode Panel Analytes

| Analyte | Retention Time (min) | Analyte | Retention Time (min) |
|-------------------|----------------------|---------------------------|----------------------|
| 6-MAM | 0.73 | Meprobamate | 0.85 |
| 7-Aminoclonazepam | 0.80 | Methadone | 0.97 |
| Alprazolam | 1.15 | Methamphetamine | 0.73 |
| Amitriptyline | 0.94 | Methylphenidate | 0.83 |
| Amphetamine | 0.58 | Morphine | 0.36 |
| α-OH-Alprazolam | 1.08 | Naloxone | 0.66 |
| Benzoyllecgonine | 0.85 | Norbuprenorphine | 0.85 |
| Buprenorphine | 0.87 | Nordiazepam | 1.09 |
| Carisoprodol | 0.92 | Norfentanyl | 0.82 |
| Citalopram | 0.87 | Norhydrocodone | 0.74 |
| Cocaine | 0.84 | Noroxycodone | 0.72 |
| Codeine | 0.73 | Nortriptyline | 0.93 |
| Cotinine | 0.39 | O-Desmethyl-cis-tramadol | 0.73 |
| Diazepam | 1.22 | Oxycodone | 0.73 |
| EDDP | 0.94 | Oxymorphone | 0.38 |
| Fentanyl | 0.88 | Paroxetine | 0.91 |
| Fluoxetine | 0.87 | PCP | 0.91 |
| Gabapentin | 0.59 | Pregabalin | 0.47 |
| Hydrocodone | 0.78 | Ritalinic Acid | 0.81 |
| Hydromorphone | 0.43 | Tapentadol | 0.81 |
| Imipramine | 0.93 | Temazepam | 1.14 |
| Lorazepam | 1.00 | THC-COOH | 1.23 |
| MDA | 0.75 | Tramadol | 0.82 |
| MDMA | 0.79 | Zolpidem | 0.88 |
| Meperidine | 0.84 | Zolpidem Phenyl-4-Carboxy | 0.82 |

Table 2.
List of Negative Mode Analytes

| Compound | Retention Time (min) |
|---------------|----------------------|
| Amobarbital | 0.89 |
| Butalbital | 0.89 |
| Phenobarbital | 0.91 |
| Secobarbital | 0.94 |
| THC-COOH | 1.24 |

Figure 3.
Morphine Isomers/Isobars on Kinetex[®] Biphenyl in MercuryMS Cartridge Format

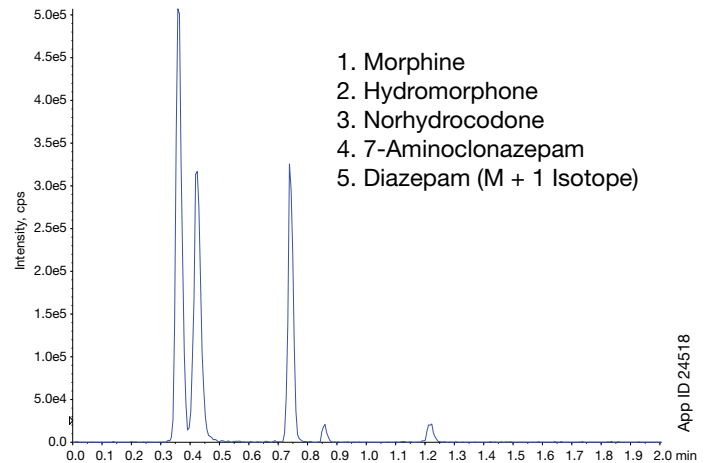


Figure 4.
Codeine/Hydrocodone on Kinetex Biphenyl in MercuryMS Cartridge Format

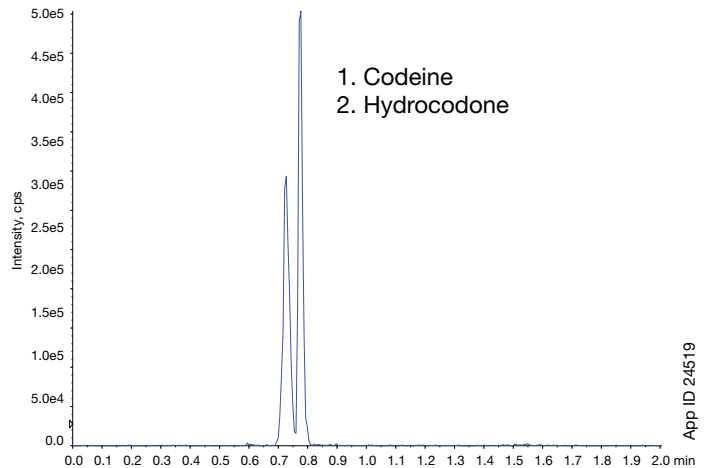


Figure 5.
Noroxycodone/Oxymorphone on Kinetex[®] Biphenyl in MercuryMS[™] Cartridge

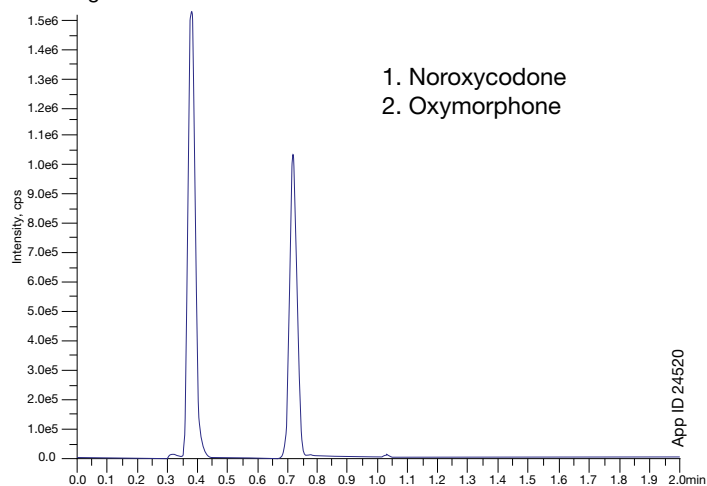


Figure 6.
Naloxone/6-Monoacetyl Morphine (6-MAM) on Kinetex Biphenyl in MercuryMS Cartridge

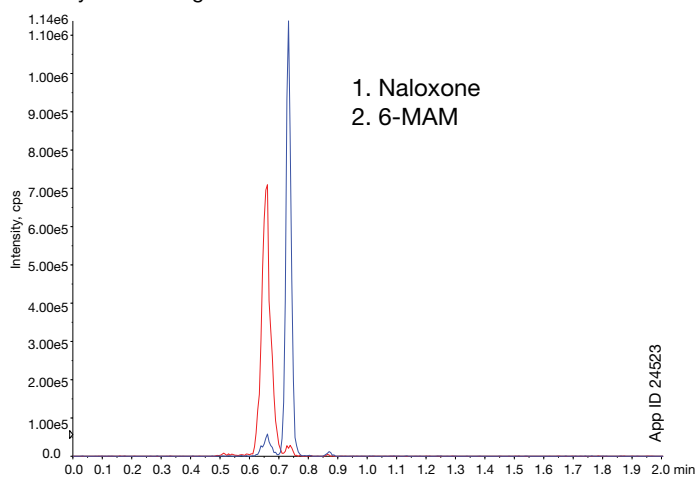


Figure 7.
Fluoxetine/Methadone on Kinetex Biphenyl in MercuryMS Cartridge

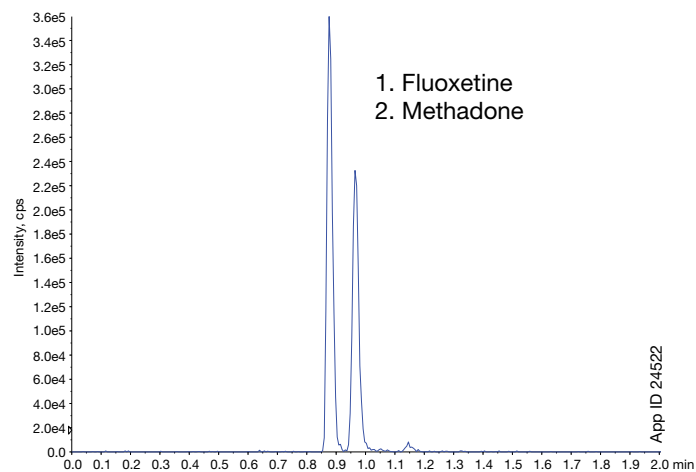
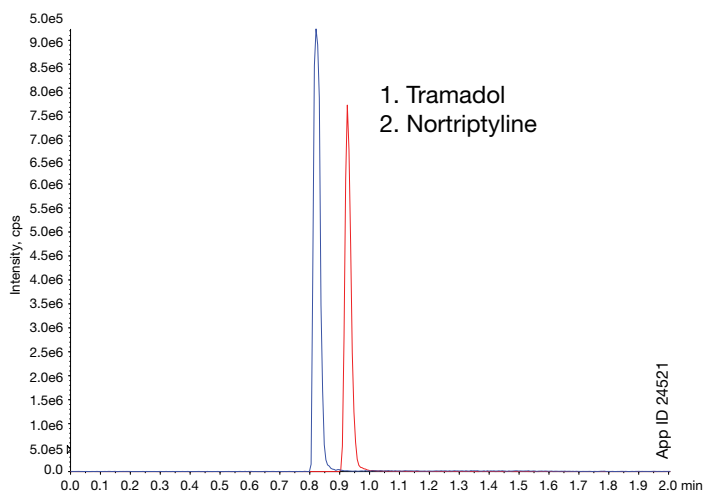


Figure 8.
Tramadol/Nortriptyline on Kinetex[®] Biphenyl in MercuryMS Cartridge



APPLICATIONS

Ordering Information

| Kinetex [®] 2.6µm Biphenyl Cartridge | | |
|---|----------------|-------------------|
| 20 x 2.0 mm | 20 x 4.0 mm | MercuryMS™ Holder |
| 00M-4622-D0-CE | 00M-4622-B0-CE | CHO-5845 |

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